

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

No claim has been amended herein.

Claim 1 (Previously Presented): A method of manufacturing polycrystalline silicon thin film using a laser beam to crystallize an amorphous silicon thin film, the method comprising:
forming an amorphous silicon layer on a substrate; and

irradiating the amorphous silicon layer using a laser beam, and transversely moving the mask relative to the substrate by a distance such that the laser beam is overlappingly irradiated at an overlapping region on the substrate where amorphous silicon and a part of already crystallized polycrystalline silicon are exposed so as to increase an average width of the polycrystalline silicon grains,

wherein a width of the overlapping region during crystallization corresponds to the distance, and is varied from no less than 0.5 μm to 2 μm , and

wherein the average width of the polycrystalline silicon grains is varied between approximately 0.2 μm and 0.6 μm , and is decreased when the width of the overlapping region on which the laser beam is overlappingly irradiated is decreased.

Claim 2 (Canceled):

Claim 3 (Previously Presented): The method of manufacturing polycrystalline silicon thin film according to claim 1, wherein a sequential lateral solidification (SLS) crystallization method is used for laser crystallization.

Claims 4-5 (Canceled):

Claim 6 (Previously Presented): A method of manufacturing polycrystalline silicon

thin film by crystallizing amorphous silicon using a laser beam, the method comprising:

forming an amorphous silicon layer on a substrate;

irradiating the amorphous silicon layer using a laser beam that passes through a mask such that polycrystalline silicon grains are laterally grown from a boundary between liquid and solid silicon, wherein the mask is provided with at least a light transmission region for passing a laser beam and a laser non-transmission region for blocking the laser beam, and the laser transmission region is wider than the laser non-transmission region by more than 1 μm ; and

transversely moving the mask relative to the substrate by a distance such that the laser beam is overlappingly irradiated at an overlapping region on the substrate where amorphous silicon and a part of already crystallized polycrystalline silicon are exposed, wherein a width of the overlapping region during crystallization corresponds to the translation distance, and is varied between 0.5 μm and 2 μm .

Claim 7 (Previously Presented): The method of manufacturing polycrystalline silicon thin film according to claim 6, wherein the mask is formed in a rectangular shape having a stripe pattern of light transmission regions and light non-transmission regions.

Claim 8 (Previously Presented): The method of manufacturing polycrystalline silicon thin film according to claim 6, wherein a width of the overlapping region during crystallization corresponds to the distance, and is varied from no less than 0.5 μm to 2 μm .

Claim 9 (Canceled):

Claim 10 (Previously Presented): The method of manufacturing polycrystalline silicon thin film according to claim 6, wherein a sequential lateral solidification (SLS) crystallization method is used for laser crystallization.

Claims 11-12 (Canceled):

Claim 13 (Previously Presented): A method of manufacturing polycrystalline silicon thin film, the method comprising:

irradiating an amorphous silicon on a thin film using a laser beam that passes through a mask, to form crystalline silicon;

transversely moving the mask relative to the thin film by a distance; and
overlappingly irradiating an already formed crystalline silicon in an overlapping region that corresponds to the distance and that has a width varied from no less than 0.5 μm to 2 μm ,
wherein the mask is provided with a light transmission region to pass the laser beam and a light non-transmission region to block the laser beam, in which a width of the laser transmission region is larger than a width of the laser non-transmission region by at least 1 μm ,
and

wherein an average width of the polycrystalline silicon grains is varied between approximately 0.2 μm and 0.6 μm , and is decreased when the width of the overlapping region on which the laser beam is overlappingly irradiated is decreased.

Claim 14 (Previously Presented): The method according to claim 13, wherein the overlapping irradiation is done by moving the laser transmission region of the mask by the distance selected between 0.5 μm and 2 μm .

Claim 15 (Canceled):